

BARRETT ELECTRONICS CORPORATION



BARRETT

Crane Commander



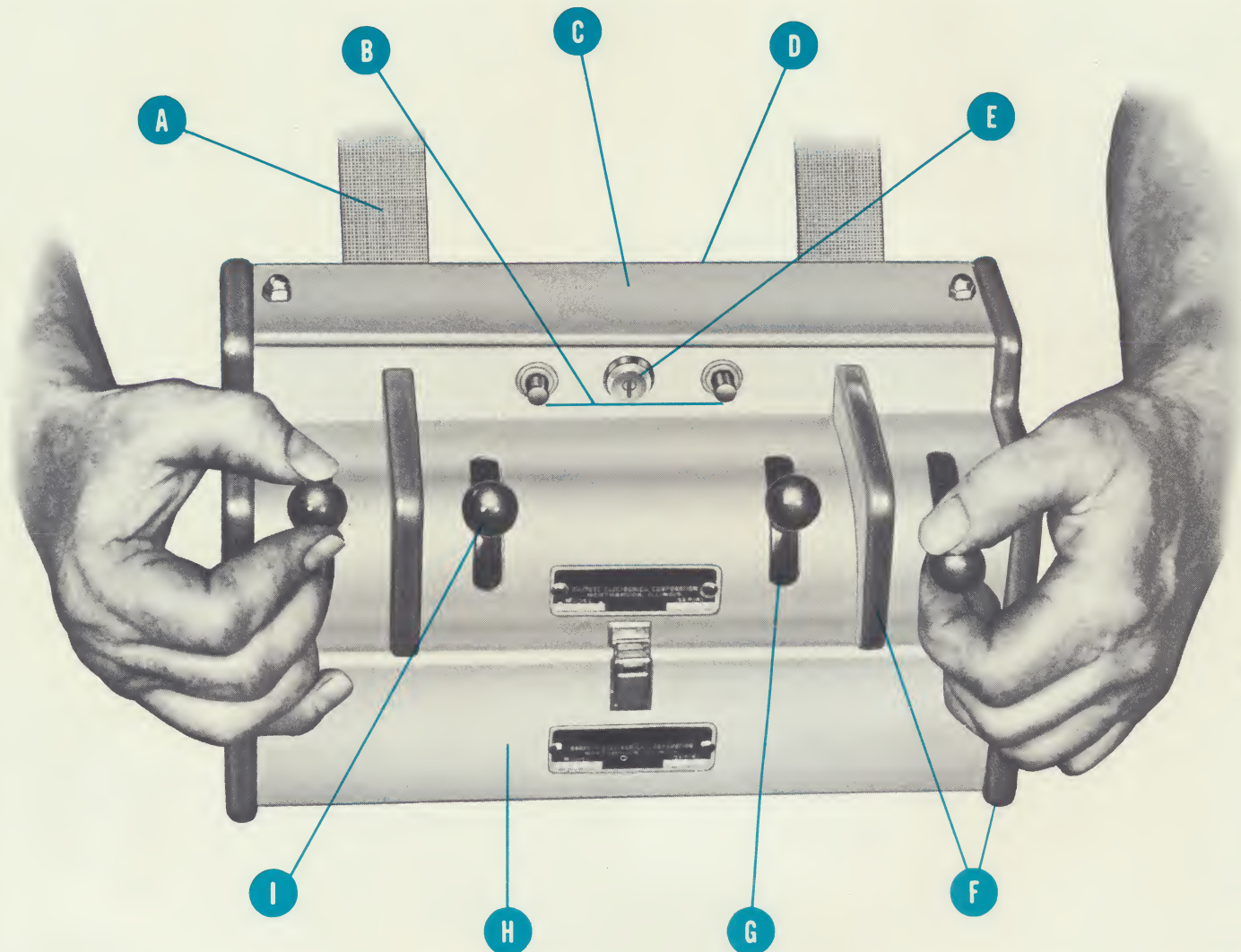
RUSHMORE & WEBER INC.
LATHAM, N. Y.
PHONE STATE 5-0548

RADIO REMOTE CONTROL



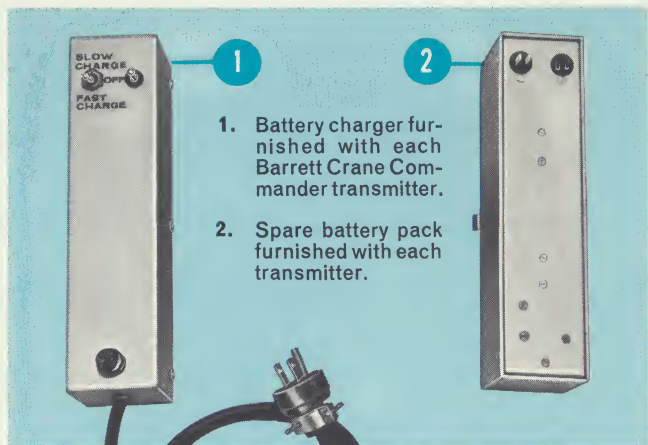
BARRETT CRANE COMMANDER

puts control where it belongs . . . right down on the plant floor! no cab operator needed . . . fail safe operation . . . no FCC license required. optional industrial radio frequencies available.



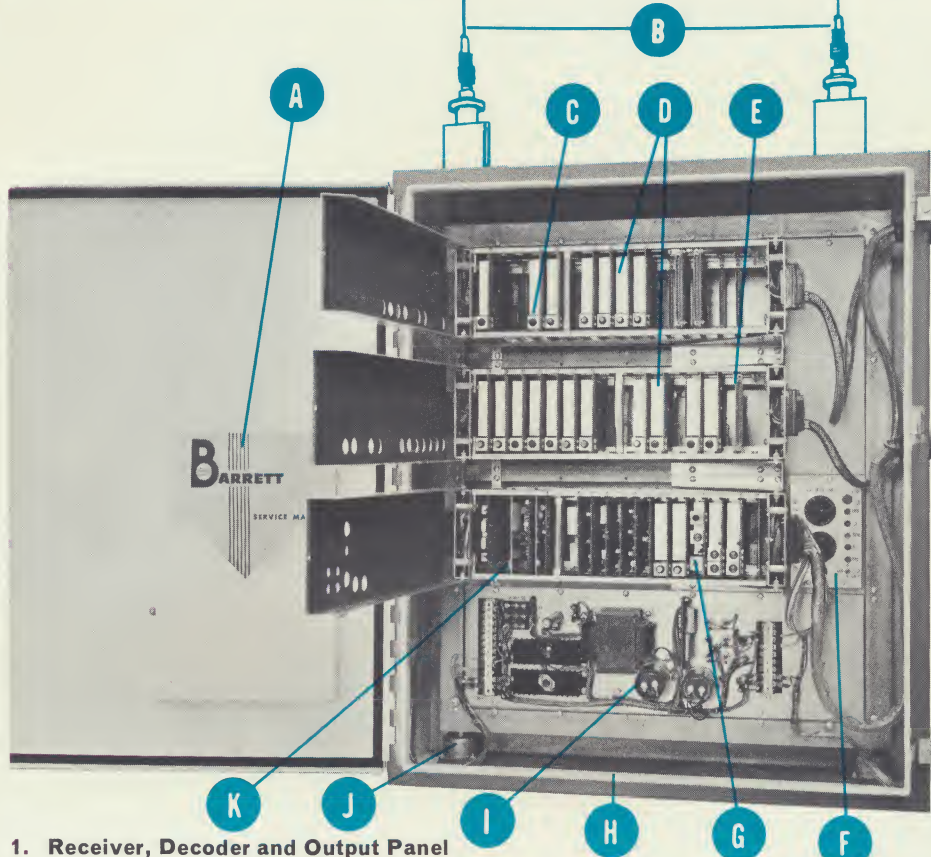
Improve efficiency and decrease operating costs, increase safety. Hand signals are eliminated. Operator remains on the floor with the load where he is able to select the most advantageous position in hazardous operations. Provides better utilization of manpower by reducing size of crane crew.

- A. Concealed monopole antenna located in shoulder harness.
- B. Convenient auxiliary function switch location for lights, warning horn and brake operation.
- C. Optional dead man palm bar for additional safety.
- D. Sturdy, light weight aluminum case.
- E. Key operated main contactor switch prevents unauthorized operation.
- F. Resilient plastic end plates and switch guards protect control levers from accidental operation and absorb shock of knocks and bumps.
- G. Control switches are individually sealed from dust and moisture—accommodate up to five controlled speed points in each direction—dual spring loaded to center off dead man position.
- H. Nickel cadmium rechargeable battery pack (2 battery packs furnished with each transmitter). Each is capable of 12 hour operation at 80% duty cycle per charge.
- I. Large $\frac{1}{2}$ " diameter knobs on $\frac{1}{4}$ " diameter control levers simulate cab controls . . . are easily grasped even with heavy gloves.



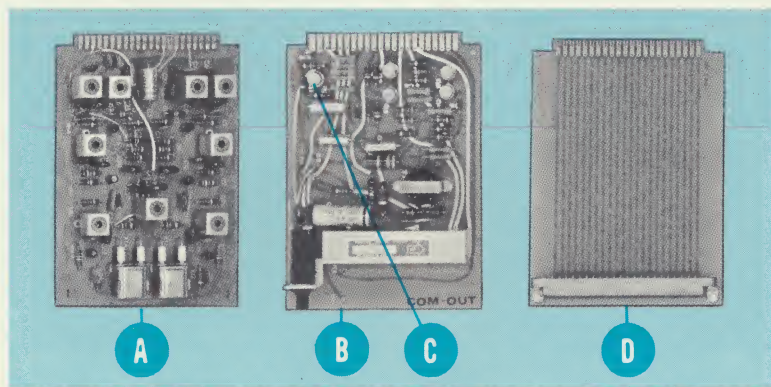
1. Battery charger furnished with each Barrett Crane Commander transmitter.
2. Spare battery pack furnished with each transmitter.

These advanced **BARRETT** features give you **COMMAND PERFORMANCE**



1. Receiver, Decoder and Output Panel

- A. Complete service manual including schematic and trouble-shooting diagrams.
- B. Dual receiving antennae usually bridge mounted.
- C. Push-to-test lamps indicate proper operation and introduce special test signal for output circuit.
- D. Output modules in two top racks are identical and interchangeable.
- E. Extender board furnished with all Crane Commanders to facilitate trouble shooting.
- F. Test-selector panel for use in trouble shooting and preventive maintenance.
- G. Test-operate switch. In test position transmitter is locked out and signal is injected directly into receiver-decoder.
- H. All modules mounted in dust and weather-tight NEMA-12 enclosures.
- I. Solid state zenor regulated power supply.
- J. All module panels are shock mounted.
- K. Rack containing dual receiver and decoder module boards.

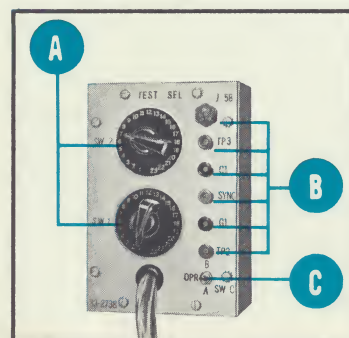


4. Typical Module Boards—All glass epoxy resin—gold plated circuit ribbons and contacts. Entire board plastic coated.

- A. Dual receiver board.
- B. Output Board.
- C. Commercially available silicon-type solid state components used exclusively in the Barrett Crane Commander—no matched or special components.
- D. Extender board.

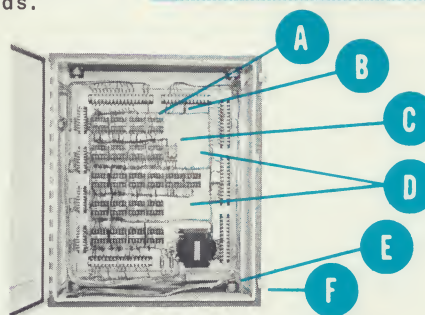
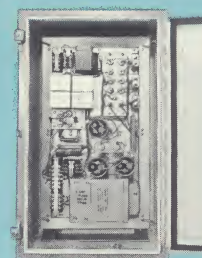
2. Test Selector Panel—Allows semi-skilled personnel to check out all circuits.

- A. Switches used to select output of each module board for voltmeter and scope display.
- B. Test points for connecting voltmeter and scope to test selector panel.
- C. Selector switch used to lock in either of the dual receivers for testing.



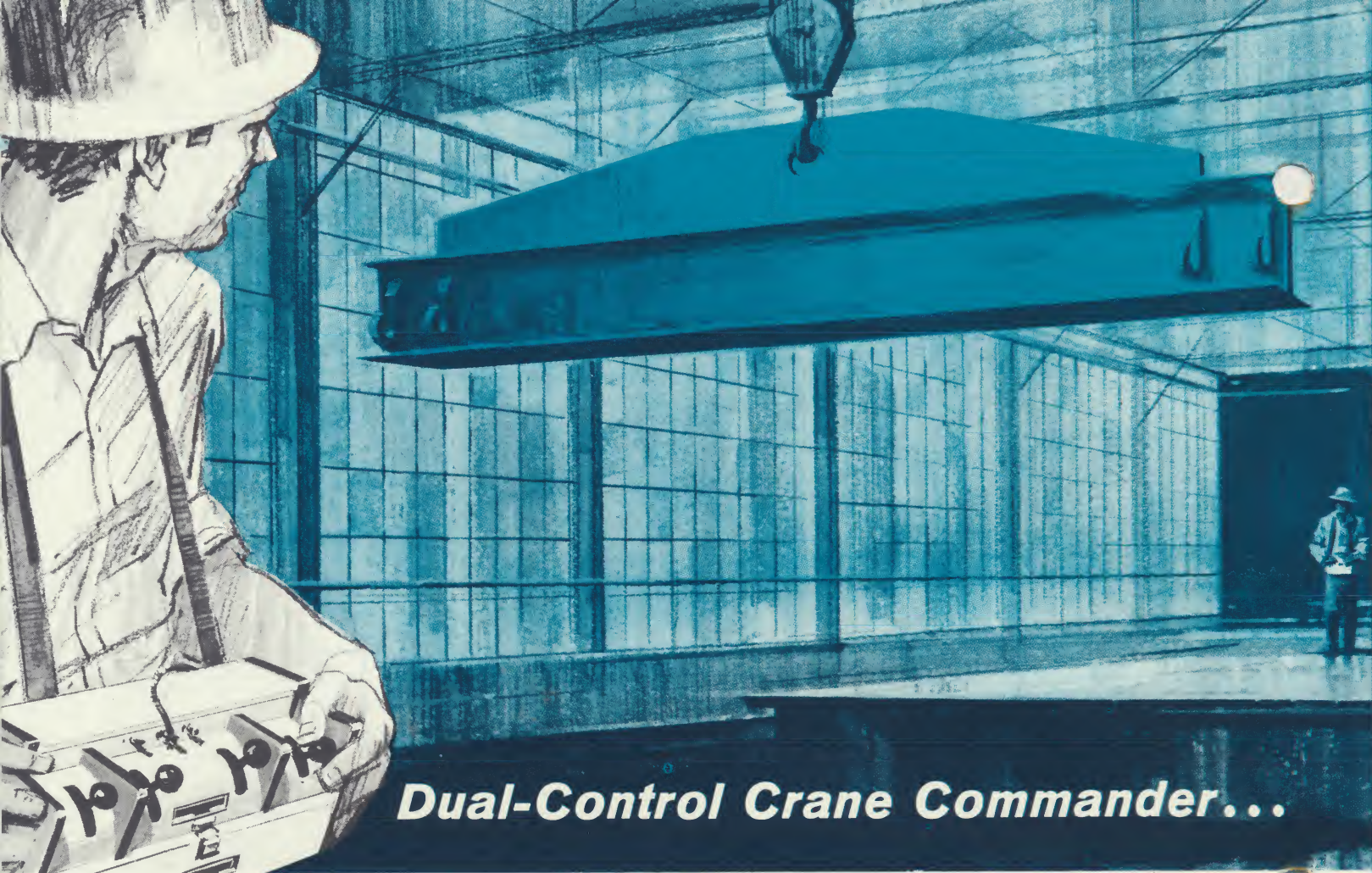
3. Solid State Power Supply

Used on DC cranes to convert DC to 115V AC, which in turn is converted to required operating voltage. Highly regulated output is unaffected by direct current voltage spikes.



5. Intermediate Relay Panel

- A. 300V AC output relays as used on AC cranes (600V relays are used on DC cranes).
- B. Terminal strips used to tie output relays in parallel with existing crane controls.
- C. Relay checking circuit prevents unsafe operation.
- D. Space for additional relays if required (may be added at a later date if number of crane functions is increased).
- E. All relay panels shock mounted.
- F. All relays mounted in NEMA-12 enclosure.



Dual-Control Crane Commander...

...with Take-Release feature

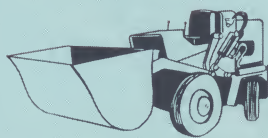
Single crane control by two operators in different locations is now possible with a new Barrett dual control system. Each operator is equipped with a separate transmitter, and the crane is equipped with an additional receiver and a special operator-selector circuit board in the receiver-decoder equipment.

Each transmitter operates on its own frequencies and

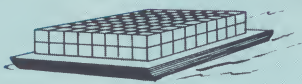
is provided with a take release switch. Indicator lights on the receivers, visible to the operators, signify which transmitter has control.

Dual Control Crane Commanders are ideal for many special applications, especially large, busy bays, where frequent trips of the crane from one end to the other are necessary.

USE CRANE COMMANDER FOR MANY REMOTE CONTROL OPERATIONS



Bucket Loaders, such as those used for slag removal, or any piece of material handling equipment operating in a dangerous or remote area can be safely controlled with Crane Commander.

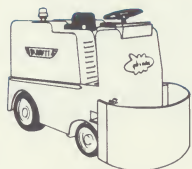


Barges can be operated from a towboat or on shore to carry on any desired function.



Switch Engines completely controlled from a mobile location or from a central location, such as a switch house, without an engineer.

SOME OF THE OTHER BARRETT PRODUCTS AVAILABLE



GUIDE-O-MATIC®
DRIVERLESS VEHICLES



RADOX® RADIO REMOTE
CONTROL TRACTORS

BARRETT ELECTRONICS CORPORATION



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BARRETT **bec** ELECTRONICS CORPORATION

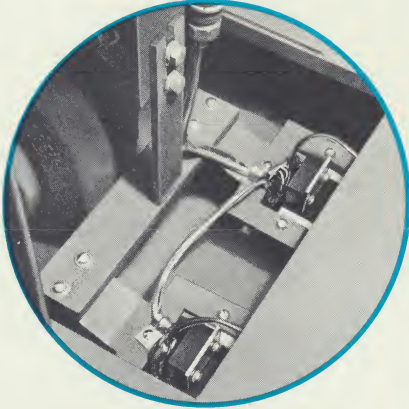


BARRETT

guide-o-matic[®]

SYSTEMS

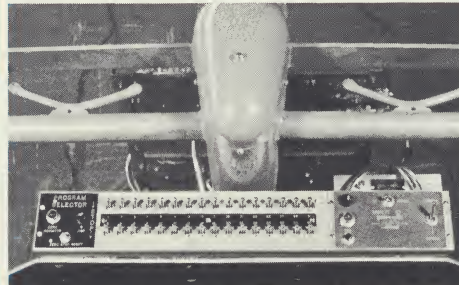
AS MODERN AS TOMORROW... ...AS VERSATILE AS THOUGHT



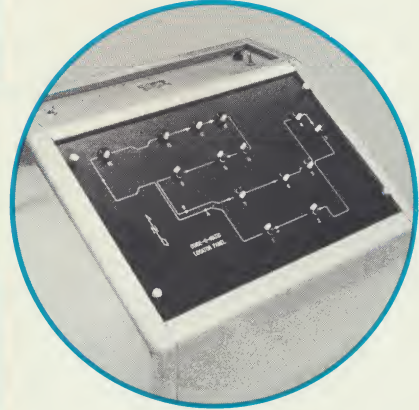
2102—Optical Sensing Unit—
Serves dual function of sensing the optical guide path, and the programming sequence. The magnetic system unit has similar components.

Programming Selector Panels—Two basic types are shown.

1058-1 panel below is used for sequential programming. The tractor circulates through the entire system station by station, stopping only at positions selected.



2003—Panel above is used in systems where multiple paths link various areas. The tractor will take the shortest route to a programmed destination at all times, without circulating through the entire system.



2130—Tractor Locator Panel—
A small console type for locating tractors on the system. Colored lights indicate position of each tractor along the route. Can be mounted in the dispatcher's office.

The horizons of material handling are being extended every day by Barrett Guide-O-Matic® systems. Applications are virtually unlimited. Hundreds of progressive companies in all types of industries have put Guide-O-Matic® to work for them.

FACTS ABOUT BARRETT GUIDE-O-MATIC® EQUIPPED TRACTORS AND TRUCKS

What It Is—BARRETT Guide-O-Matic systems control material movement by electronic guidance, and can be adapted to almost all types of equipment, machinery and vehicles.

How It Works—The BARRETT Guide-O-Matic principle is available in two basic systems—Magnetic and Optical. The magnetic system gives positive guidance of the vehicle by a sensing device which follows an energized guide wire embedded in a shallow slot in the floor.

There are three basic components in the magnetic system: The wire guide path, the sensing device which follows the wire and guides the tractor, and the converter which supplies energy to the guide wire.

In the optical system the sensing device follows a painted line or colored tape on the floor. It has application where frequent changes in guide paths are necessary.

The BARRETT Guide-O-Matic equipped tractor normally operates at speeds of 1½ to 3 miles per hour. This moves materials as fast or faster than manually operated vehicles moving at high speeds, since a BARRETT Guide-O-Matic vehicle follows routes planned to balance material flow. It maintains the same accuracy during each trip down aisles, around corners, through congested areas. It stops only at pre-selected stations. No time is wasted in jockeying through "tight" spots. No excessive wear is caused by abusive acceleration and deceleration, starting and stopping. BARRETT

Guide-O-Matic vehicles can be driven manually at any time.

What BARRETT Guide-O-Matic Equipped Tractors and Trucks Can Do For You—BARRETT Guide-O-Matic vehicles are now the accepted standard for the horizontal movement of materials. A system can be as automatic as you require. When coupled with automatic loading and unloading, your material handling is not only completely automated but also done at a cost far below that of any system known. Your plant can realize savings of over 80% in operator time alone.

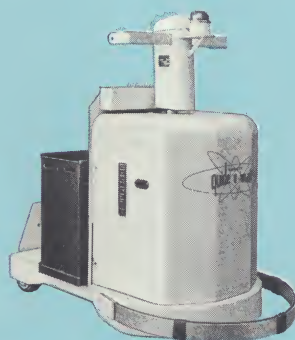
Programmed control eliminates costly errors, and expensive breakage due to careless handling. A BARRETT Guide-O-Matic vehicle will move your material 24 hours a day.

ECONOMICAL FEATURES

1. Driverless—No wages, no coffee breaks, no overtime.
2. Accurate guidance—Less aisle space required.
3. Routes—Chosen by engineers for most efficient movement of materials.
4. Less maintenance—Automatic operation gives constant speeds, eliminates abusive use.
5. Easy to install—No inconvenience or costly plant shut-downs.
6. Versatile system easily changed, expanded, or relocated.
7. Low Initial Cost BARRETT vehicles can be supplied for manual operation only, and later converted to Guide-O-Matic operation.

One or more of these driverless Barrett Guide-O-Matic® tractors is your best answer for Automated Materials Handling

Choice of tractor depends primarily upon weight of loads to be towed. Ramp performance required and duty cycle of load handling are also factors to be considered. Experienced Barrett material handling engineers are at your disposal to help you make the proper selection.



MODEL GS-3
15,000 pounds capacity

This stand-up rider tractor is the basic BARRETT model equipped with electronic controls. Its programmed control over a planned route will give your plant the continuous material movement needed to meet requirements of modern, up-to-date production and warehousing.

Features . . . BARRETT single package power-drive unit. Instant-acting patented safety bumper. Solid state electronic accelerator—no moving parts. Multiple speeds forward and reverse. Can be manually driven at any time.

GS-3 SPECIFICATIONS

TYPE—Electric stand-up rider.

CAPACITY—Normal drawbar pull—300 lbs. Ultimate drawbar pull—700 lbs. Rated rolling load, level—15,000 lbs. Ratings can be exceeded for limited amounts of time.

SPEED—Approximately 3 MPH empty—2.8 MPH with rated load. Three speeds forward, three speeds reverse. Static stepless speed control optional. Other speeds available.

ACCELERATOR—Solid state electronic motor control with no mechanical timing devices. Completely encapsulated, provides independently adjustable time delays between motor speeds.

BATTERIES—24 volt standard. Battery compartment 27" long x 13 1/4" wide x 31" high. Can be lengthened to accommodate lead-acid batteries up to 660 ampere-hours.

CONTROLS—Forward and reverse lever and Guide-O-Matic or manual control lever located on control panel at base of steering column. Squeeze-type speed and brake controls in steering handles, can be operated by either hand.

WEIGHT—1,050 lbs. less battery.

WHEELS—Front drive wheel 10" x 4" rubber. Rear wheels 7" x 2 1/2" rubber. Tapered roller bearings.

STEERING—"T" type handle.

BRAKE—Manual operation—7" diameter automotive type, operated by squeeze-type handle grips. Dead-man brake activated when foot switch is released.

Guide-O-Matic operation—dynamic braking. Standard 3" high safety bumper activates dead-man brake. 24" high safety bumper optional.

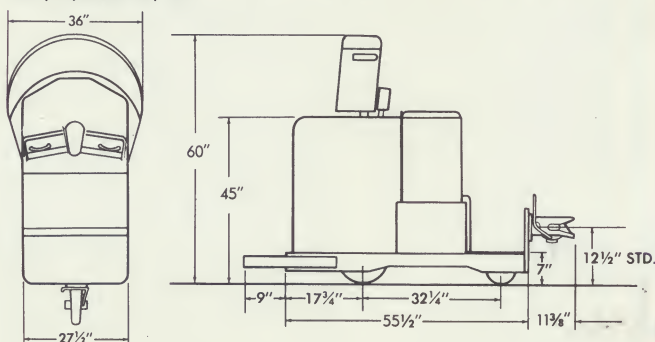
DRIVE—Barrett gear drive built as a single unit.

PATENTED SAFETY BUMPER—Brings tractor to an abrupt halt if object is contacted in tractor path. Normally 3" wide and mounted on tractor frame. Can also be mounted on tractor hood. 24" high bumper also available.

COUPLER—Jaw type standard, normally mounted 12 1/2" from floor to centerline of jaw.

MINIMUM INTERSECTING AISLES—Tractor Only—Manual operation 66". Guide-O-Matic operation 96".

MOTOR—Barrett shunt-wound motor to operate at pre-set speed with minimum speed droop through wide variations in load during down-ramp operations, etc.



MODEL G-20-A
25,000 pounds capacity

A heavy-duty electric powered tractor designed for tough load hauling and trouble-free operation. Rugged, heavyweight construction and control components give constant and dependable movement of materials over a selected path of travel—up and down ramps, around corners, indoors or out.

Features . . . Minimum of three speeds forward, three speeds reverse. Other speeds available. 25,000 pound rolling load capacity. Instant-acting patented safety bumper. Solid state electronic accelerator—no moving parts. Automotive-type steering mechanism.

G-20-A SPECIFICATIONS

TYPE—Electric sit-down rider.

CAPACITY—Normal drawbar pull—500 lbs. Ultimate drawbar pull—2,000 lbs. Rated rolling load, level—25,000 lbs. Ratings can be exceeded for limited amounts of time.

SPEED—Approximately 3 MPH empty—2.8 MPH with rated load. Minimum of three speeds forward, three speeds reverse. Other speeds available. Static stepless speed control optional.

ACCELERATOR—Solid state electronic motor control with no mechanical timing devices. Completely encapsulated, provides independently adjustable time delays between the three motor speeds.

BATTERIES—24 volt standard. Battery compartment 40" long x 29 1/4" wide x 31" high. Maximum lead-acid battery 1,360 ampere hours.

CONTROLS—Manual control features steering wheel and foot-operated accelerator and brakes. Forward-reverse direction control lever and Guide-O-Matic or manual control lever located on control panel on front cowling.

WEIGHT—3,550 lbs. less battery.

WHEELS—Rear drive wheels 22" x 6" rubber tire. Front wheels 16 1/4" x 5" rubber tire. Tapered roller bearings.

STEERING—Automotive type.

BRAKE—Foot operated hydraulic for manual operation. Dead-man brake activated when operator leaves the seat.

Guide-O-Matic operation—dynamic braking. Standard 24" high safety bumper activates dead-man brake.

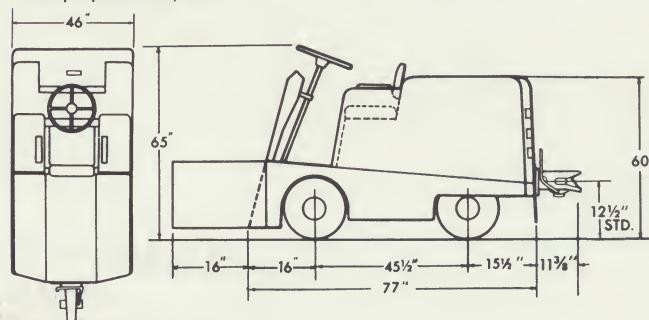
DRIVE—Heavy duty dual rear wheel drive.

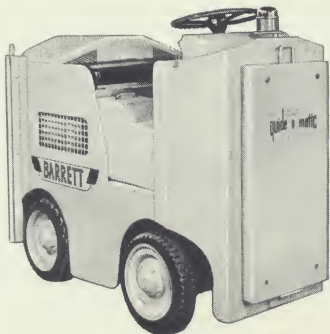
PATENTED SAFETY BUMPER—Brings tractor to an abrupt halt if object is contacted in tractor path. Bumper approximately 16" in front of frame.

COUPLER—Jaw type standard, normally mounted 12 1/2" from floor to centerline of jaw.

MINIMUM INTERSECTING AISLES—Tractor only, without safety bumper. Manual operation 76". Guide-O-Matic operation 120".

MOTOR—Barrett shunt-wound motor to operate at pre-set speed with minimum speed droop through wide variations in load during down-ramp operations, etc.

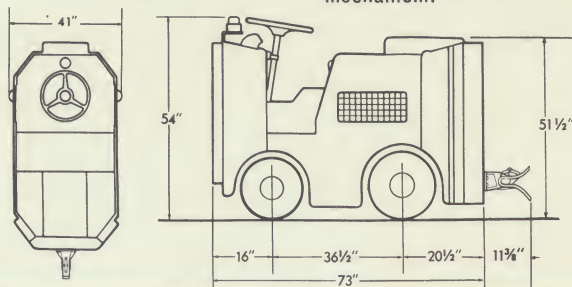




MODEL GTG-3 100,000 pounds capacity

Gasoline or LPG powered tractors like this GTG-3 are equipped with Barrett Guide-O-Matic controls for heaviest load towing over long distances. Ideal for outdoor applications where sustained operation and ramp travel is required.

Features . . . 4-cylinder continental gasoline engine. Speeds to 10 miles per hour. Hydraulic drive transmission. 100,000 pounds rolling load capacity. Instant-acting patented safety bumper. Automotive type steering mechanism.



GTG-3 SPECIFICATIONS

TYPE—Gasoline or LPG sit-down rider.

CAPACITY—Ultimate drawbar pull—3,000 lbs. Rated rolling load, level—100,000 lbs.

SPEED—1 MPH to 10 MPH. Note: Speeds above 3 MPH are for special applications only.

CONTROLS—Manual control features steering wheel and foot-operated accelerator and brake. Guide-O-Matic or manual control lever located on control panel at base of steering wheel.

WEIGHT—6,800 lbs.

WHEELS—Rear drive wheels 22" x 8" rubber tires, non-skid tread. Front wheels 17" x 4 1/2" rubber tires.

STEERING—Automotive type.

BRAKE—Manual operation—Internal expanding mechanical brakes operated by foot pedal. Dead-man brake activated when operator leaves the seat.

Guide-O-Matic operation—Dynamic braking. Optional dead-man brake activated by safety bumper.

DRIVE—Fully hydraulic transmission.

PATENTED SAFETY BUMPER—Brings tractor to an abrupt halt if object is contacted in tractor path. Bumper approximately 2 feet in front of frame.

COUPLER—Jaw type standard, normally mounted 12 1/2" from floor to centerline of jaw.

MINIMUM INTERSECTING AISLES—Tractor only—Manual operation 56". Guide-O-Matic operation 120".

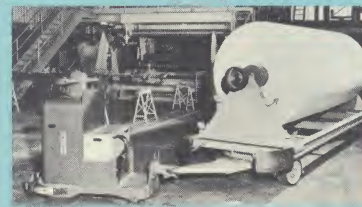
ENGINE—Continental model F-162, 4 cylinders.



2382—Inclines and ramps are all in a day's work for BARRETT Guide-O-Matic equipped tractors. They can maintain their same pre-set speed whether moving up or down inclines.



1879—Multiple tractor systems speed load movement through a warehouse. Tractors take shortest path to destination.



1801—Precise positioning of loads for machine feeding is a critical requirement. BARRETT Guide-O-Matic systems are accurate; never deviate from the programmed pattern.

The versatile BARRETT Guide-O-Matic system can be adapted to any tractor-trailer hauling function in which materials and parts are delivered between departments over a planned sequence of movement. In addition, Stock Selector hi-lift trucks used in parts picking operations, and Platform lift trucks have also been equipped with the BARRETT Guide-O-Matic systems for electronic, foolproof guidance.

Industries successfully using BARRETT Guide-O-Matic equipped vehicles include paper mills, food processing plants and warehouses, chemicals and explosive plants, glass and TV tube manufacturing plants, electrical manufacturing plants, machine tool and metal fabricating plants, automotive plants and warehouses, etc.

Some of the versatile variations which BARRETT engineers can incorporate into the BARRETT Guide-O-Matic systems to meet your plant requirements include:

1. Automatic intersection control.
2. Block beacon systems to permit multiple tractor operation on the same guide path.

See Guide-O-Matic in action—ask your BARRETT representative to show you the latest Guide-O-Matic movie.

3. Remote, local and programmed control of route switching.
4. Remote, local and programmed control of stopping points.
5. Automatic door opening and closing.
6. Intersection or blind corner warning devices.
7. Remote indication of tractor location.
8. In-motion warning and protective devices.
9. Time-delay control of stops, with automatic re-start.
10. Multiple guide path systems.
11. Remote local and programmed control of side-track switching.
12. Automatic speed control for operation in congested areas or when approaching sharp turns and stopping points.
13. Automatic train uncoupling device.
14. Superior operation in the same indoor and outdoor conditions under which a manually controlled vehicle would operate.
15. Automatic load and unload.

BARRETT ELECTRONICS

Radio-Remote Control Products

■ Radox® Tractors

For Warehouse Order-Picking

■ Crane Commander

For Overhead Cranes

and many other remote control applications

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